

DEPARTMENT of ENVIRONMENTAL SERVICES  
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: MANNING LAKE	Lake Area (ha):	81.58
Town: GILMANTON	Maximum depth (m):	16.4
County: Belknap	Mean depth (m):	6.1
River Basin: Merrimack	Volume (m <sup>3</sup> ):	4951000
Latitude: 43°28'38" N	Relative depth:	1.6
Longitude: 71°20'29" W	Shore configuration:	1.31
Elevation (ft): 715	Areal water load (m/yr):	9.55
Shore length (m): 4200	Flushing rate (yr <sup>-1</sup> ):	1.60
Watershed area (ha): 1530.5	P retention coeff.:	0.56
% watershed ponded: 0.6	Lake type:	natural

<u>BIOLOGICAL:</u>		8 January 1998	20 August 1997
DOM. PHYTOPLANKTON (% TOTAL)	#1	UROGLENOPSIS 30%	TABELLARIA 27%
	#2	DINOBYRON 25%	CHRYSOSPHAERELLA 25%
	#3	ASTERIONELLA 15%	RHIZOLENIA 22%
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			4.53
DOM. ZOOPLANKTON (% TOTAL)	#1	CALANOID COPEPOD 25%	KELICOTTIA 26%
	#2	NAUPLIUS LARVA 23%	KERATELLA 16%
	#3	ROTIFER SPP 12%	ASPLANCHNA 12%
ROTIFERS/LITER		18	72
MICROCRUSTACEA/LITER		31	26
ZOOPLANKTON ABUNDANCE (#/L)		52	100
VASCULAR PLANT ABUNDANCE			Scat/Common
SECCHI DISK TRANSPARENCY (m)			6.0
BOTTOM DISSOLVED OXYGEN (mg/L)		11.9	1.6
BACTERIA (E. coli, #/100 ml)	#1		2
	#2		< 1
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 7.5  
Hypolimnion volume (m<sup>3</sup>): 227000  
Anoxic volume (m<sup>3</sup>): None

**CHEMICAL:**

Lake: MANNING LAKE  
Town: GILMANTON

	8 January 1998		20 August 1997		
DEPTH (m)	6.0	12.0	3.0	10.0	14.5
pH (units)	6.6	6.4	7.0	6.5	6.2
A.N.C. (Alkalinity)	3.5	3.8	3.8	3.9	8.0
NITRATE NITROGEN	< 0.05	< 0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.20	0.20	0.20	0.20	0.40
TOTAL PHOSPHORUS	0.007	0.007	0.001	0.006	0.007
CONDUCTIVITY ( $\mu$ mhos/cm)	26.5	26.5	23.8	23.7	29.4
APPARENT COLOR (cpu)	15	15	12	15	35
MAGNESIUM			0.37		
CALCIUM			2.1		
SODIUM			1.4		
POTASSIUM			0.32		
CHLORIDE	< 2	< 2	< 2		< 2
SULFATE	4	4	4		3
TN : TP	29	29	200		57
CALCITE SATURATION INDEX			3.4		

All results in mg/L unless indicated otherwise

**TROPHIC CLASSIFICATION: 1997**

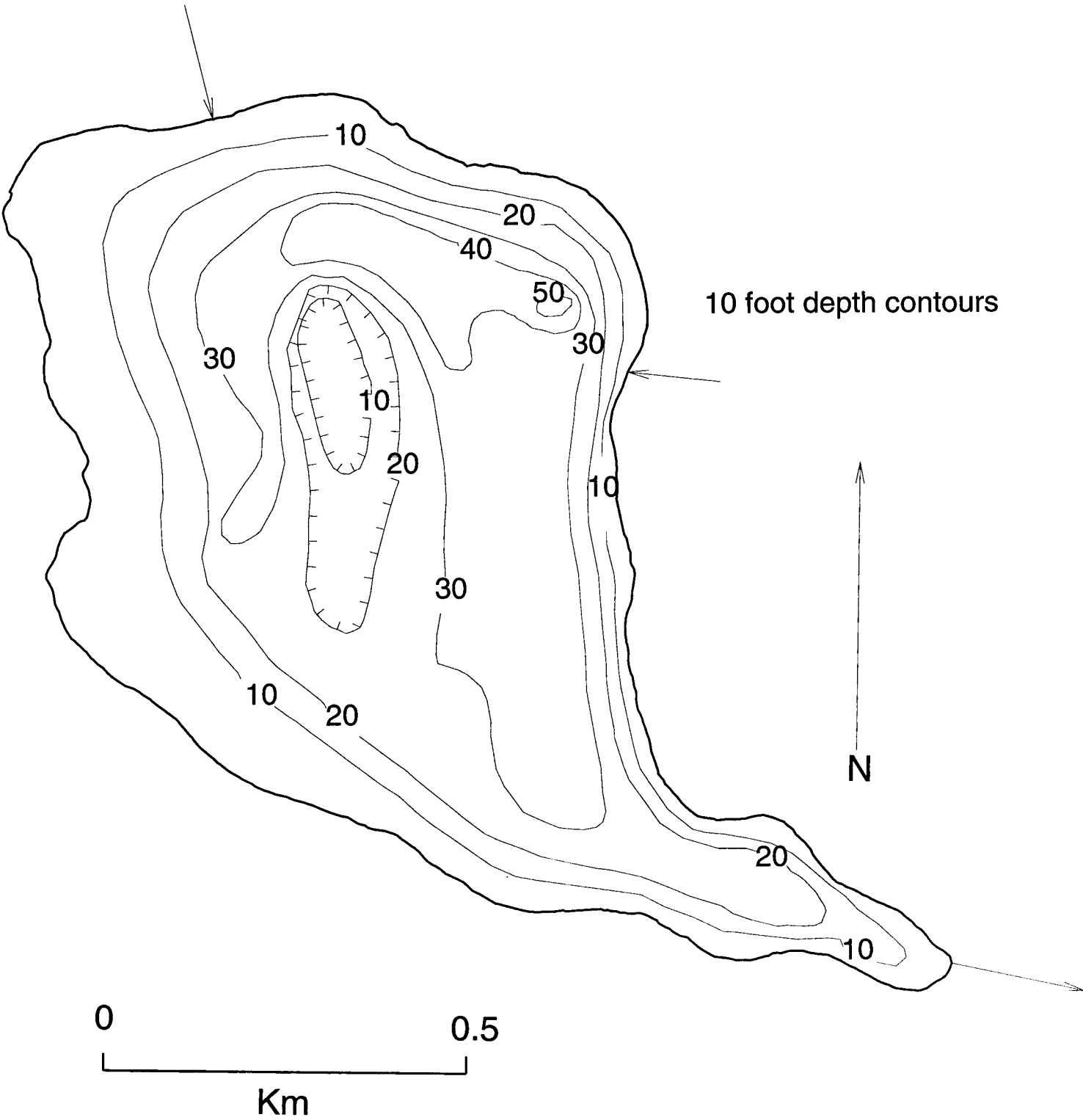
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
1	1	2	1	5	Oligo.

**COMMENTS:**

1. Formerly called Guinea Pond.
2. This lake was previously surveyed in 1982 and was also classified oligotrophic at that time. The major difference in water quality between the two dates was in the bottom dissolved oxygen. In 1982 the D.O. was approximately 5 mg/L at a bottom depth of 14 meters. In 1997 a deeper depth was sampled, and the D.O. dropped below 1 mg/L at 13 meters (with a slight increase at the very bottom).
3. Shallow boat launch but adequate parking and no restrictions.
4. This is a clear, nutrient poor, oligotrophic lake with low conductivity.

# Manning Lake

## Gilmanton



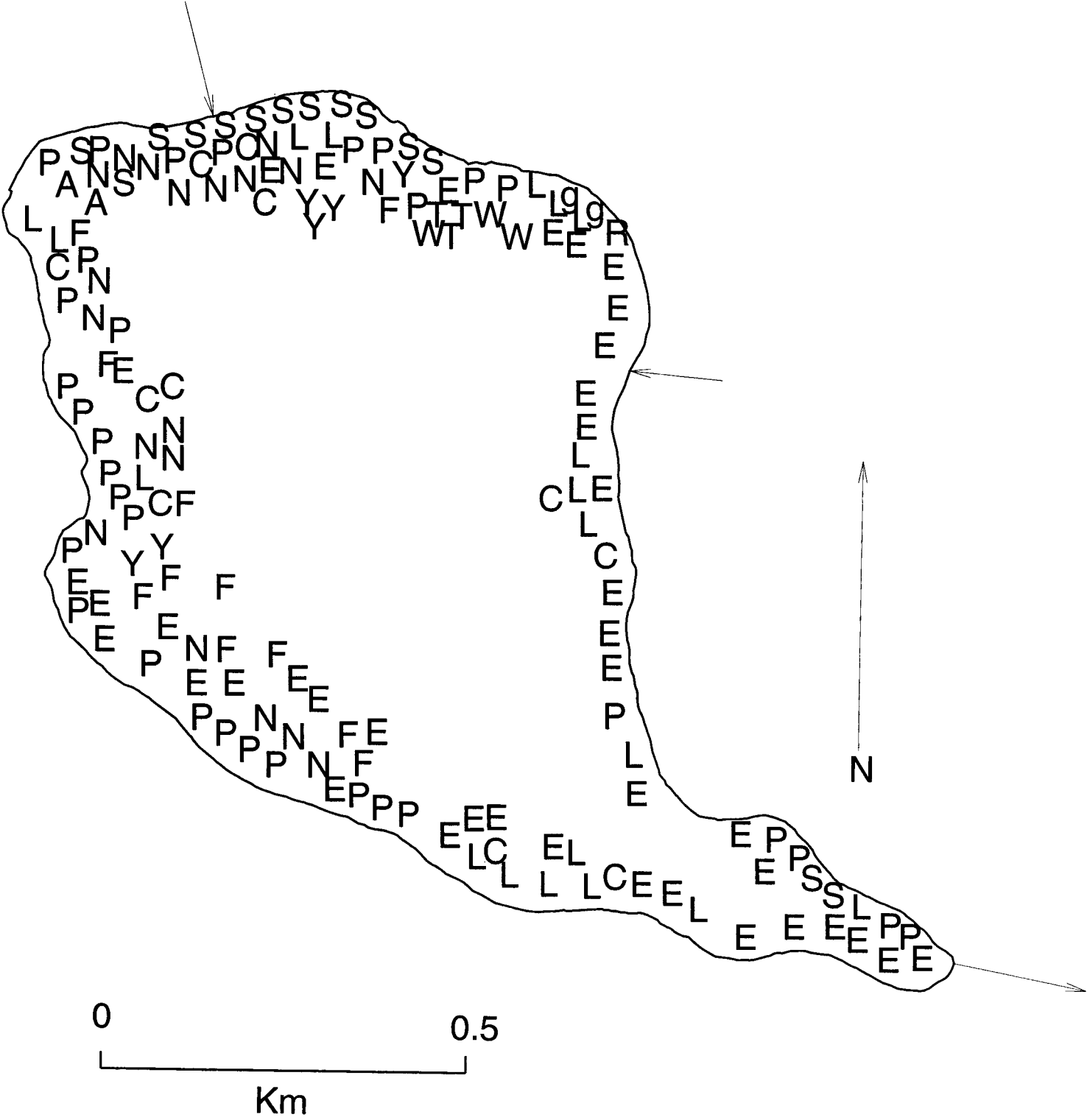
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**COMMENTS:** The slight rise in dissolved oxygen at the very bottom of the lake was apparently due to photosynthesis by bottom plant growth in this very clear lake.

\*Dissolved oxygen values are in mg/L

# Manning Lake

Gilmanton



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